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### Case Report: Repeated Use of Tetrahydrocannabinol Associated with Severe Cerebral Vasoconstriction

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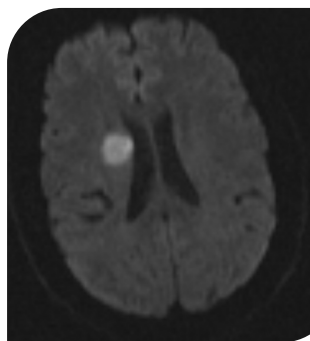
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## Background

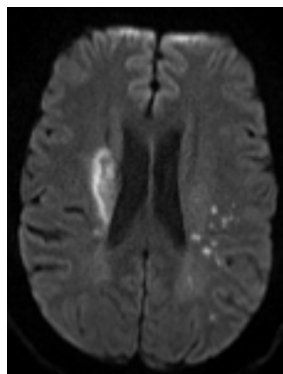
- Reversible Cerebral Vasoconstriction Syndrome (RCVS) is a rare neurological syndrome.
- The classic presentation consists of recurrent, severe, "thunderclap" headaches with neuroimaging findings consistent with segmental vasoconstriction of cerebral arteries.
- Sympathomimetics including cannabinoids have been found to be triggers in many cases of RCVS.
- Complications include subarachnoid hemorrhage, intracerebral hemorrhage, cerebral edema and ischemic infarction.

## Objective

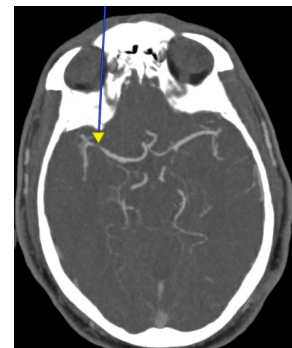
- To present a case of a patient with a history repeated tetrahydrocannabinol (THC) use led to recurrent multifocal ischemic infarcts and severe, persistent cerebral vasoconstriction



**Figure 1**  
MRI brain demonstrating right corona radiate stroke.



**Figure 2**  
MRI brain demonstrating new, multiple, punctate infarcts in the left fronto-parietal area.



**Figure 3**  
CTA Head revealing new stenosis of the distal right M1.

## Case Report

- A 52 year old male with past medical history of uncontrolled Hypertension presented with new onset symptoms of dysarthria, left facial droop, left hemiparesis and severe headache. MRI of brain demonstrated a right subcortical white matter stroke (**Figure 1**). UDS was positive for THC. After 8 days of inpatient stay, patient was discharged to rehabilitation with Aspirin 81 mg, Lipitor 80 mg, and Plavix 75 mg and extensively counseled on abstinence from THC. Less than 30 days later, the patient re-presented with new symptoms of expressive aphasia and right facial droop. MRI of brain demonstrated new, multiple punctate infarcts in the left fronto-parietal areas (**Figure 2**). CTA Head and Neck demonstrated new stenosis of the distal M1 (**Figure 3**). Ten days later, patient re-presented with altered mental status and unsteady gait. MRI demonstrated new infarcts in the right Middle Cerebral Artery distribution. The patient was hospitalized for 30 days. After 30 days of hospitalization, the patient was discharged on medications, Aspirin, Lipitor and Verpamil. Following 3 months, the patient underwent repeated DSA which revealed persistent multifocal narrowing throughout the intracranial circulation with minimal progression in the distal right MCA.

## Conclusions

- This case highlights the potential devastating and irreversible effects of RCVS precipitated by exposure to a sympathomimetic agent.
- The case emphasizes the importance of patient counseling regarding abstinence from agents that may provoke RCVS.

## References

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2. Chen, S.P., Fuh, J.L., Lirng, J.F., Chang, F.C. and Wang, S.J. , *Recurrent primary thunderclap headache and benign CNS angiopathy: spectra of the same disorder?* . Neurology, 2006. **67**: p. 2164-2169.
3. Chen, S.P., Fuh, J.L., Wang, S.J. , *Reversible Cerebral Vasosntriction Syndrome: An Under-recognized Clinical Emergency*. . Therapeutic Advances in Neurological Disorders. , 2010. **3**(3): p. 161-171.